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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,352	01/28/2004	Bayard J. Osthaus	INFNP102US	3304

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ESCHWEILER & ASSOCIATES, LLC
NATIONAL CITY BANK BUILDING
629 EUCLID AVE., SUITE 1210
CLEVELAND, OH 44114

EXAMINER

LAM, CATHY FONG FONG

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,352

Applicant(s)

OSTHAUS, BAYARD J.

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 45-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15, 18, 20, 21, 23-29, 31-38, 43 and 53-58 is/are rejected.
- 7) ☒ Claim(s) 7, 16, 17, 19, 22, 30, 39-42, 44 and 59 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-44 & 53-59, drawn to an electronic device, classified in class 361, subclass 774.
 - II. Claims 45-52, drawn to a method of making an electronic device, classified in class 29, subclass 850+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a different process such mold a metal base such that it has a recessed (or channel) portion and a flange portion(s), apply adhesive onto the recessed portion of the metal base or onto the bottom of a ceramic circuit board, place the circuit board into the recess. The process as claimed can be used to make a different product such as a toy article.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Atty: Thomas Eschweiler on Oct. 13th 2004 a provisional election was made without traverse to prosecute the invention of group I, claims 1-44 & 53-59. Affirmation of this election must be made by applicant in replying

to this Office action. Claims 45-52 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. Claims 53-59 are rejected under 35 U.S.C. 112, second & sixth paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant repeatedly used the term "means" is indefinite and unclear, "the base means", "the circuit board means" and "the flange means", etc. are bound by the disclosure in the specification. Applicant is suggest to delete the term "means".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-6, 8-15, 18, 20-21, 23-29, 31-38, 43, 53-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Natsuhara et al (US 5602720) in view of Gorczyca et al (US 5161093) or Cole, Jr. et al (US 5745984).

Natsuhara discloses a structure for mounting a semiconductor device comprised of a metallic base (3), a heat sink (2), a ceramic plate (1) and a semiconductor device (4) (Figs. 3A, 3B, 4A, 4B).

The semiconductor device (4) is formed onto the ceramic plate (1) and the heat sink (2) may be formed below the ceramic plate (1) or onto the surface of the ceramic plate (Figs. 3B, 4A & col 4 L 2-3 & L 23-25).

The metallic base (3) has a recessed (or channel) portion where the ceramic plate (1) and the heat sink (2) reside (Figs. 3A, 3B, 4A, 4B). In one embodiment, the ceramic plate (1) and the heat sink (2) were placed within the recessed portion and that the total thickness after the ceramic plate placed within the recess does not extend above (or about the same) the base's flanges thickness (Figs. 4A & 4B).

The CTE of the metallic base (3) is greater than the CTE of the ceramic plate (col 2 L 26-28 & L 31-32).

Natsuhara teaches the present invention but is silent about having an adhesive layer used for bonding the ceramic plate (1) to the metallic base (3).

Both Gorczyca and Cole, jr. teach a structure comprised of a substrate with cavities (or recess), an electronic component (16&12) are placed within the cavities, the electronic components are bonded to the substrate via an adhesive (15&17), respectively.

Thus, in view of the prior art teachings, one skill in the art would choose an adhesive material (conductive or non-conductive) for bonding the ceramic PCB to the metallic base because it is conventional to use adhesive for bonding components together.

It would have been obvious to choose a desired copper alloy for the base substrate because it is a matter of design choice.

Allowable Subject Matter

8. Claims 7, 16-17, 19, 22*, 30, 39-42, 44* and 59 are objected to as being dependent upon a rejected base claim, but would be allowable if incorporate into the base claims. Claims 22 & 44 are most preferred.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cathy Lam
Primary Examiner
Art Unit 1775

cfl
October 14, 2004